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November 21, 1997

William F. Caton  
Acting Secretary  
Federal Communications Commission  
1919 M Street, N.W.  
Washington, D.C. 20554

**RECEIVED**

NOV 21 1997

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

**Re: *Ex Parte* Presentation**  
**MM Docket No. 87-268**

Dear Mr. Caton:

Valerie Schulte, Karen Fullum, and Lynn Claudy of the National Association of Broadcasters ("NAB"), Victor Tawil of the Association for Maximum Service Television ("MSTV"), and Ellen Goodman and Jennifer Johnson of Covington & Burling met yesterday with each of the following: David Siddall, Legal Advisor to Commissioner Ness; Jane Mago, Senior Legal Advisor to Commissioner Powell; Rick Chessen, Senior Legal Advisor to Commissioner Tristani; and Susan Fox, Senior Legal Advisor to Chairman Kennard. The meeting with Ms. Fox also was attended by Bruce Franca, Deputy Chief of the Office of Engineering and Technology. These meetings were to discuss the *ex parte* submission filed by MSTV, NAB and other broadcasters the same day in the above-captioned proceeding. A copy of this *ex parte* submission (without appendices) is attached.

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William F. Caton  
*Ex Parte* Presentation  
November 21, 1997  
Page 2

In accordance with Rule 1.1206(b), the original and one copy of this disclosure have been submitted this 21st day of November to the Office of the Secretary. Questions regarding this matter should be directed to the undersigned.

Sincerely,

A handwritten signature in cursive script, appearing to read "Ellen P. Goodman".

Ellen P. Goodman

*Counsel for the Association for  
Maximum Service Television*

Attachments

cc: David Siddall, Esq.  
Jane Mago, Esq.  
Rick Chesson, Esq.  
Susan Fox, Esq.  
Bruce Franca

**RECEIVED**

**NOV 20 1997**

**FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY**

Before the  
Federal Communications Commission  
Washington, D.C. 20554

In the Matter of )  
 )  
Advanced Television Systems )  
and Their Impact Upon the ) MM Docket No. 87-268  
Existing Television Broadcast )  
Service )

TO: The Commission

**EX PARTE SUBMISSION BASED ON NEW TECHNICAL DISCOVERIES  
TO HELP THE COMMISSION IMPROVE  
THE DTV TABLE OF ALLOTMENTS/ASSIGNMENTS  
SUBMITTED BY  
THE ASSOCIATION FOR MAXIMUM SERVICE TELEVISION, INC.  
AND OTHER BROADCASTERS**

November 20, 1997

## **LIST OF EXHIBITS**

### **Appendix 1: Documents illustrating the impact of the Improvements (continental U.S.).**

- Exhibit 1A:** Improvements to the FCC's DTV Table that focus on correcting the DTV-to-DTV adjacent channel problem and reducing interference to NTSC service in the three Acute Problem Areas (the Northeast, the Great Lakes region and the California coastal region).
- Exhibit 1B:** The FCC's DTV Table with corrected coverage and interference figures to reflect the true extent of DTV-to-DTV adjacent channel and other interference factors (referenced in the MSTV Supplemental Reply Comments (October 8, 1997)).
- Exhibit 1C:** A list of DTV-to-DTV adjacent channels that are short-spaced.
- Exhibit 1D:** Examples of improvements to Acute Problem Areas.
- Exhibit 1E:** Example of improvements to DTV-to-DTV adjacent channel problem.
- Exhibit 1F:** A list of channels assigned in channels 60-69 in the Improvements.

### **Appendix 2: Technical reports highlighting the DTV-to-DTV adjacent channel interference problem.**

- Exhibit 2A:** ATTC, *An Evaluation of the FCC RF Mask for the Protection of DTV Signals from Adjacent Channel DTV Interference* (July 17, 1997).
- Exhibit 2B:** Eilers and Sgrignoli, *Analyzing the FCC's DTV Spectral Emission Mask and Potential Degradation to Adjacent Channels Due to Antenna Pattern Differences* (to be published in *IEEE Transactions on Broadcasting* (1997)).
- Exhibit 2C:** JTCAB Ad Hoc Group on DTV Planning Parameters, *Digital Television Service Considerations and Allotment Principles* (August 1997).

### **Appendix 3: Negotiated regional solution of the Eastern Washington and Northern Idaho DTV Allocation Caucus.**

Before the  
Federal Communications Commission  
Washington, D.C. 20554

In the Matter of	)	
	)	
Advanced Television Systems	)	
and Their Impact Upon the	)	MM Docket No. 87-268
Existing Television Broadcast	)	
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TO: The Commission

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**I. INTRODUCTION**

Although the Commission released the Fifth and Sixth Reports and Orders (the "R&Os") in this docket in April,<sup>1</sup> it is only now that the Commission has the information needed to arrive at sensible solutions to DTV channel assignment problems. These problems would restrict the availability of DTV service and endanger NTSC service in many markets and threaten to slow the transition to digital television. We believe that the Commission can and should ameliorate these problems without delaying the conclusion of this proceeding by even one day.<sup>2</sup>

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<sup>1</sup> Fifth Report and Order, MM Docket No. 87-268, FCC 97-116 (adopted April 3, 1997, released April 21, 1997); Sixth Report and Order, MM Docket No. 87-268, FCC 97-115 (adopted April 3, 1997, released April 21, 1997) ("Sixth R&O").

<sup>2</sup> If the Commission decides to put this ex parte submission out for comment, it should set a short comment period no longer than 15 days. To avoid delay, the Commission should not provide  
(continued...)

The Commission has undertaken a Herculean task in assigning more than 1600 DTV channels to existing broadcasters, and it has done so with a remarkable degree of receptiveness to public and industry concerns. The public owes the Commission much for enabling the launch of digital television. Nonetheless, it is inevitable in a proceeding this complex for there to be questions of implementation and, indeed, the Commission has before it more than 230 petitions for reconsideration of the R&Os. In addition, more than 60 supplemental petitions for reconsideration are pending. Many of these petitions raise serious questions about the practicability of some portions of the table of DTV allotments/assignments contained in Appendix B of the Sixth R&O (the "DTV Table"). The petitions reflect both individual station concerns and broader industry perspectives.

Understanding and addressing the concerns raised in these petitions has been a long and difficult process. It was only after the July release of OET Bulletin No. 69 -- a technical guidance document critical to analyzing the Commission's DTV Table -- that the industry could begin to assess specific channel assignments and propose alternatives where necessary. Then there were late-breaking technical discoveries that had to be digested and taken up in recommendations to the Commission. These developments explain why there

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<sup>2</sup>(...continued)  
for reply comments. Under the Administrative Procedures Act, the Commission is required to "give interested persons an opportunity to participate in the rule making through submission of written data, views, or arguments with or without opportunity for oral presentation." 5 U.S.C. § 553(c). This duty is discharged through the acceptance and consideration of comments and whether or not to provide for reply comments rests in the Commission's discretion. See 47 C.F.R. § 1.415(d); Public Notice, 11 FCC Rcd. 16718 (rel. Nov. 19, 1996). A single round of comments for a limited comment period would be reasonable, particularly in light of the wide dissemination of the draft Improvements and the opportunity for industry comment prior to their finalization and submission in this pleading. (See Section II below).

have been six rounds of reconsideration pleadings over a five-and-a-half month period. Each of these rounds has built on the last, culminating in supplemental reply comments filed in October. Contained in these filings are recommendations for a few changes that should be made in this reconsideration phase to get DTV off on the right foot. Stations also will need the flexibility to make DTV station facility and channel changes as the transition proceeds. At the same time, this filing recognizes that the broadcast industry, the equipment manufacturing industry, and the American public count on quick action from the Commission to resolve the DTV channel assignments. Without doubt, the Commission faces a tremendous challenge in meeting Congress' mandate of quick action while protecting the public's existing and future stake in television service. This filing attempts to further assist the Commission to conclude the proceeding quickly while making the right choices in this critical stage when the technical viability of the DTV channel assignments hangs in the balance.

Below, we follow up on previous filings that identified two systemic problems with the DTV Table. The first concerns DTV-to-DTV adjacent channels that were assigned too close together and could result in severely decreased DTV service areas. *Neither the Commission nor the industry knew of this problem until late summer when the actual DTV interference characteristics were discovered through laboratory testing and published.* The second problem concerns assignments that will deprive millions of people of existing and new television service in the most spectrum-congested parts of the country -- the Northeast, Great Lakes region, and California coast (the "Acute Problem Areas").

This filing also shows how these problems can be alleviated quickly and with

minimum disruption to the Commission's DTV allotment/assignment scheme.<sup>3</sup> These suggestions are not intended to foreclose favorable consideration of present and future requests for individual changes to the DTV Table. Rather, they attempt to show the Commission that certain systemic problems with the DTV Table can be resolved or alleviated; the Commission should also take into account the concerns and suggestions of individual stations and groups such as the Eastern Washington and Northern Idaho DTV Allocation Caucus<sup>4</sup> both at this reconsideration phase and throughout the transition.<sup>5</sup>

## **II. BACKGROUND**

On June 13, 1997, a coalition of broadcasters representing the television networks, associations and numerous major groups including the undersigned, filed a petition for partial reconsideration and clarification of the R&Os (the "Petition").<sup>6</sup> While generally accepting the Commission's DTV allotment/assignment methodology, the Petition identified

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<sup>3</sup> Efforts were made to preserve most of the FCC's DTV assignments. Changes were made only where called for by the most extreme cases of interference. No changes were made to 1394 assignments.

<sup>4</sup> See Appendix 3.

<sup>5</sup> As noted in the Petition, the Commission must establish a streamlined mechanism for making post-reconsideration adjustments to the DTV channel allotments/assignments. Specifically, the Commission should adopt an approach that minimizes the number of petitions filed to amend the DTV Table and encourages regional solutions to shared problems. The Commission should facilitate both intra-market and inter-market channel swaps and should take steps to establish industry DTV coordinating committees, define their appropriate role and provide the tools these committees will need to help broadcasters and the Commission as DTV rolls out. See Petition at 23-28; Reply to Oppositions to Petitions for Reconsideration of the Fifth and Sixth Reports and Orders Submitted by the Association for Maximum Service Television, Inc. and the National Association of Broadcasters, MM Docket No. 87-268 (July 31, 1997) at 2-4.

<sup>6</sup> Petition for Clarification and Partial Reconsideration of the Fifth and Sixth Reports and Orders Submitted by the Association for Maximum Service Television, Inc., the Broadcasters Caucus and Other Broadcasters, MM Docket No. 87-268 (June 13, 1997)



serious problem areas in the DTV Table that result in increased interference to the NTSC service, decreased DTV service, and inaccurate service replication figures. The principal signatories of the Petition<sup>7</sup> promised to work with other broadcasters to propose specific improvements to the DTV Table, particularly in the three Acute Problem Areas.<sup>8</sup> At the time that the Petition was filed, the Commission had yet to release OET Bulletin No. 69 (the "Bulletin"), a technical guidance document for digital operations essential for understanding the application of the operating parameters for the Longley-Rice methodology and interpreting the interference results of proposed channel or facility changes.<sup>9</sup>

The Bulletin was released on July 2, 1997. Acknowledging the importance of this guidance document in effectively analyzing the impact of the DTV Table, the Commission released an order that same day providing an additional period until August 22, 1997 for petitioners to supplement pending petitions for reconsideration of individual DTV allotments.<sup>10</sup>

Shortly thereafter, the Broadcasters Caucus filed a response to other petitions

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<sup>7</sup> The Broadcasters Caucus was responsible for drafting the Petition. The Broadcasters Caucus is an ad hoc group of broadcast organizations (ABC, ALTV, APTS, CBS, Chris-Craft, Fox, MSTV, NAB, NBC, PBS, and Tribune) that was formed in 1990 as a part of the Advanced Television Systems Committee to represent broadcasters on DTV issues. ALTV and Fox did not sign the Petition, but endorsed it at least in part in their separate filings.

<sup>8</sup> See Petition at 17-18.

<sup>9</sup> See *id.* at 29. The Sixth R&O makes a number of references to the Bulletin, indicating that it is to serve as "[g]uidance for evaluating coverage areas using the Longley-Rice methodology," "[g]uidance for evaluating interference," and "[g]uidance on using the Longley-Rice methodology." Sixth R&O at E-30, E-35, E-39. In their petitions for reconsideration, more than 100 petitioners expressly commented on the absence of the Bulletin or the lack of information regarding the Commission's allotment methodology.

<sup>10</sup> See Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service, Order, FCC 97-1377 (July 2, 1997).

for reconsideration, notifying the Commission of a serious concern that had just been uncovered by Advanced Television Technology Center ("ATTC") testing.<sup>11</sup> The ATTC showed that the Commission and the industry had severely underestimated the extent to which real-world DTV signals are susceptible to interference and, therefore, that many adjacent DTV channels were situated too close together.<sup>12</sup> This conclusion is confirmed by work done in Canada, where experts concluded that the DTV-to-DTV adjacent channel interference problem is serious enough to prohibit DTV-to-DTV adjacent channel assignments within 80 to 100 km of each other.<sup>13</sup> The Canadian report is included at Appendix 2.

On August 22, 1997, more than sixty petitioners filed supplemental petitions for reconsideration in light of the technical guidance provided in OET Bulletin No. 69. Oppositions to the supplements were filed in late September and on October 8, 1997, MSTV filed a reply to these supplemental oppositions.<sup>14</sup> The October filings were the last in six

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<sup>11</sup> See Comment On and Opposition to Petitions for Reconsideration of the Fifth and Sixth Reports and Orders Submitted by the Association for Maximum Service Television, Inc. and the Broadcasters Caucus, MM Docket No. 87-268 (July 18, 1997) at 29-30 (hereinafter "Joint Opposition"). This filing was followed by the submission of reply comments on July 31, 1997.

<sup>12</sup> Broadcasters submitted the ATTC study as part of comments filed in response to petitions for reconsideration. See id. at Appendix 1 (An Evaluation of the FCC RF Mask for the Protection of DTV Signals from Adjacent Channel DTV Interference, Advanced Television Technology Center, Inc. (July 17, 1997)). The ATTC found that typical DTV-to-DTV adjacent channel performance was 20 dB worse than that used by the FCC to develop the DTV Table.

<sup>13</sup> The Improvements presented here permit DTV-to-DTV adjacent channel assignments located more than 70 km from each other. As noted in our July filing, one way to slightly lessen the impact of adjacent channel interference problems would be to replace the fixed mask adopted in the Sixth R&O with a specification of total average power in the adjacent 6 MHz channel, weighted for DTV-to-NTSC adjacencies and unweighted for DTV-to-DTV adjacencies. See Joint Opposition at 30.

<sup>14</sup> Reply to Oppositions to Supplemental Engineering Information Filed in Support of Petitions for Reconsideration Submitted by the Association for Maximum Service Television, Inc., MM Docket No. 87-268 (October 8, 1997).

rounds of reconsideration pleadings filed in response to the R&Os.

In filing the Petition, Broadcasters requested additional time to use the Bulletin to craft appropriate solutions for the Acute Problem Areas. Further engineering analyses using the Commission's software and methodology set forth in the Bulletin generally confirmed the Petition's earlier findings regarding replication and interference under the Commission's DTV Table. In the October pleading, MSTV was able to provide more details on the extent of the DTV-to-DTV adjacent channel problem. MSTV showed that in some cases, this DTV-to-DTV interference will result in DTV service that replicates less than 37% of the NTSC service area. MSTV showed, for example, that the replication for WCTD in Miami, Florida will be only 36.9%; replication for WMFP in Lawrence, Massachusetts will be 45.6%; replication for WDZL in Miami, Florida will be 52.9%; and replication for WMVT in Milwaukee, Wisconsin will be 70.1%. Further analysis shows that the DTV Table contains about 250 adjacent DTV channel assignments that are too close together given what we now know about DTV adjacent channel interference. A list of these channel pairs is attached at Exhibit 1C. This short-spacing will significantly reduce the DTV service areas by up to 60% for nearly 130 stations (or at least one in each pair of adjacent channels).

Over the summer and continuing into the fall, MSTV led an effort to further analyze the extent of the Acute Problem Areas and DTV-to-DTV adjacent channel interference problems and propose possible solutions. The result was a set of improvements (the "Improvements") derived from the same neutral principles that have guided other joint industry efforts in the past to inform the Commission's DTV allotment/assignment process. By neutral, we mean that channel assignments are made systematically by a computer

program that is blind to station identity -- to who owns a station or whether a station is noncommercial, commercial, a network affiliate or an independent. The program only heeds evidence of interference and attempts to rectify the most egregious cases of interference to existing and DTV service. At the same time, the program attempts to make as few changes to the DTV Table as possible so as to reduce disruption to the Commission's process.

Several drafts of these Improvements were circulated to the entire industry, which was time-consuming, but it was important to gain as much industry support for the process as possible. A draft substantially similar to Exhibit 1A was made available to the broadcasting industry through notification by NAB and MSTV of general access to the information on MSTV's web page (<http://www.mstv.org>) and through direct mailings and distributions. Broadcaster reactions were requested and, in some cases, are reflected in the Improvements. However, given the importance of making this filing this week, there was not time to widen the signatory list.

### **III. THE IMPROVEMENTS**

The Improvements are attached at Exhibit 1A. The Improvements make 357 changes to the DTV Table in the Continental U.S.<sup>15</sup> and achieve the following results:

- As compared with the DTV Table, the Improvements reduce the amount of interference to NTSC and DTV service by: 33% in the Northeast, more than 32% in the Great Lakes region and 25% in the southern California region. These reductions would benefit about 8 million people<sup>16</sup> who, under the DTV Table, would lose

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<sup>15</sup> About three-quarters of these changes were in the Acute Problem Areas.

<sup>16</sup> This is the aggregate number of potential viewers per channel.

service.<sup>17</sup>

- The Improvements remedy some of the most egregious cases of interference in the Acute Problem Areas (see Exhibit 1D). The Petition included graphic representations of some of these cases. For example, the Petition (at Exhibit 7) showed that, under the DTV Table, WTVR in Richmond VA would suffer new interference that would result in a 17.8% reduction in NTSC service area and a 15.8% population loss. Under the Improvements, WTVR would suffer *no* new interference to its NTSC service area and no population loss. The Petition (at Exhibit 7) showed that, under the DTV Table, WPTO in Oxford Ohio would suffer new interference that would result in a 23.7% reduction in NTSC service area and a 32.2% population loss. Under the Improvements, these figures would be reduced to only a 2.8% loss of NTSC service area and a 4.6% population loss. The Petition (at Exhibit 7) showed that, under the DTV Table, WJBK in Detroit would suffer new interference that would result in a 35% reduction in NTSC service area and a 12.5% population loss. Under the Improvements, there would be no new interference.
- The Improvements cure the short-spacing of all the cases of DTV-to-DTV adjacent channels in Exhibit 1C. This cure was responsible for about two-thirds of all channel assignment changes the Improvements made to the DTV Table. The following shows the impact of these changes on the cases cited in Section II above and in the October filing. WCTD in Miami moves from replicating only 36.9% of its NTSC service area under the DTV Table to replicating 98.6%; WMFP in Lawrence, Massachusetts moves from 45.6% to 99.7% replication; WDZL in Miami moves from 52.9% to 98.8% replication; and WMVT in Milwaukee moves from 70.1% to 100% replication. See Exhibit 1E.
- To achieve these results, the Improvements make only an additional 32 assignments in channels 60-69 in the Continental U.S. See Exhibit 1F for a list of DTV assignments in channels in 60-69. The additional assignments in channels 60-69 will have little impact on the availability of spectrum for public safety services because they are in congested areas in which the operation of public safety services will necessarily be limited by existing NTSC stations<sup>18</sup> even if the DTV Table were adopted as-is.<sup>19</sup>

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<sup>17</sup> Exhibit 1B shows the DTV Table corrected to accurately affect the impact of DTV-to-DTV adjacent channel interference. Limited corrections also were made to reflect other database errors and discrepancies in the Commission's DTV Table.

<sup>18</sup> See Reply Comments on the Notice of Proposed Rule Making Submitted by the Association for Maximum Service Television, Inc. and the National Association of Broadcasters, ET Docket No. 97-157 (October 14, 1997) at 4-6 (discussing the limited availability of spectrum for public safety in the major markets); Broadcasters' Comments on the Sixth Notice of Proposed Rulemaking, MM Docket No. 87-268, at 41-42 (November 22, 1996) (citing Report by MIT MacDonald Professor of  
(continued...)

Furthermore, use of one 60-69 channel for DTV in a market does not necessarily preclude or even limit public safety use of 24 MHz in this band.<sup>20</sup>

#### IV. NEXT STEPS

Commission is faced with the two fundamental systemic problems in the DTV Table that the Improvements address. These problems must be addressed if the foundation for DTV service is to have integrity and longevity. Naturally, the Improvements do not fully solve the two systemic problems that are highlighted here and there are other, station-specific problems that this filing does not address. Moreover, it is becoming increasingly clear that it will be necessary to have a de minimis standard of permissible interference rather than the "no new interference" standard adopted in the R&Os. MSTV and other broadcasters are working on developing a possible de minimis standard that would make the DTV application and adjustment process (*e.g.*, making changes to power and siting) easier and less administratively

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<sup>18</sup>(...continued)

Economics, Dr. Jerry A. Hausman, attached as Appendix D thereto, in which Professor Hausman values the limited amount of spectrum in channels 60-69 that is not tied up with providing or protecting existing television service; Comments of the State of California, ET Docket No. 97-157 (Sept 15, 1997) at 3 (noting that "within California there is no spectrum currently allocated which is capable of meeting the State's spectrum needs due to existing over-crowding"); Comments of the County of Los Angeles, ET Docket No. 97-157 (Sept. 15, 1997) at 2 (stating that "the Los Angeles metropolitan area is one of the most, if not the most, heavily spectrum congested regions of the country").

<sup>19</sup> Fortunately, the Commission had the foresight to provide flexibility to accommodate the possible need for additional use of channels 60-69 for the DTV transition. The Commission noted that many of the petitions for reconsideration filed in the DTV Proceeding request allotments in channels 60-69 during the transition and stated: "our decisions on these petitions could affect the allocations proposed herein. If any additional DTV full service allotments are made as a result of these petitions, they would be afforded full protection during the DTV transition period." Notice of Proposed Rule Making, ET Docket No. 97-158 (rel. July 10, 1997) at ¶ 1.

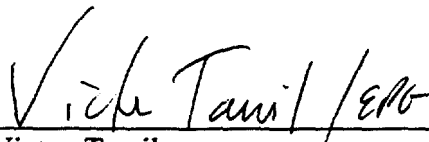
<sup>20</sup> The Improvements are sensitive to public safety's need for spectrum in channels 60 to 69 in the most congested markets. To this end, they eliminated DTV assignments in channels 68 and 69 in Los Angeles to allow for consideration of a public safety assignment in that city.

burdensome.

Although this filing does not address every station's concern, we hope that it will help expedite the roll-out of digital television by remedying many of the problems reflected in our Petition and others that would have emerged during the transition. We urge the Commission to act expeditiously to correct the problems we have identified, resolve as many station concerns as possible and establish a formal mechanism for broadcasters to raise and resolve technical concerns as the transition progresses.

Respectfully submitted,

ASSOCIATION FOR MAXIMUM  
SERVICE TELEVISION, INC.



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November 20, 1997